

SUPPLEMENTAL TESTIMONY IN RESPONSE TO COMMITTEE QUESTIONS FOR EVIDENTIARY HEARINGS REGARDING THE SALTON SEA GEOTHERMAL PROJECT (02-AFC-2)

On October 17, 2003 the Committee for the Salton Sea Project issued a series of questions to be answered at Hearings scheduled on October 27, 2003. The topics, questions, and staff responses are provided below. Staff declarations were provided with the Final Staff Assessment Parts 1 and 2, and the Staff Assessment Addendum.

HAZARDOUS MATERIALS

Supplemental Testimony of Geoff Lesh and Rick Tyler


Question: Describe the physical arrangement of the containment structures for the hazardous materials in AFC Table 5.14.1. We are interested in assessment/analysis conducted regarding hazardous materials spill compatibility (e.g. ammonium compounds & (sodium) hypochlorite, diesel & sulfuric acid)

Response: Staff assumes the question is based upon concern for the probable reaction between sulfuric acid and sodium hypochlorite ($\text{H}_2\text{SO}_4 + 2\text{NaHClO} \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O} + \text{Cl}_2$). Mixing of hypochlorite and sulfuric acid could produce chlorine gas. Due to the formation of chloramines, mixing of ammonia and hypochlorite solutions should be avoided.

The Site Plot Plan of Salton Sea Unit 6 (Figure 3.3-1B) shows HCl is in a separate bermed area from ammonium chemicals, and hypochlorite is in a separate bermed area from both HCl and the ammonium chemicals.

The 600 gallons of 37% Sulfuric Acid will be stored in a bermed tank located near the filter press area. The berms surrounding all chemical storage tanks will have sufficient capacity to hold the contents of the respective tank plus the projected volume of a 100-year rain event or an additional ten percent, whichever is greater.

Question: Describe rationale for excluding hydrochloric acid from CalARP/RMPP plan preparation.

Response: Applicant proposes to use 32% Hydrochloric acid. (AFC Table 5.14-1). Cal-ARP regulations apply to either gaseous Hydrogen chloride or to Hydrochloric acid at concentrations of 37% or greater, including anhydrous Hydrochloric acid. (California Code of Regulations, Title 19, Section 2770.5,  ples 1 and 3, Final CalARP Regulations, November 16, 1998).

ENVIRONMENTAL JUSTICE

Supplemental Testimony of Robert Worl

Question: Staff's FSA indicates that the minority population exceeds 50 percent within a six mile area of the proposed site. Describe outreach efforts to this population by Applicant (and/or staff) and efforts at meaningful involvement/input by the minority population into the process.

Response: The Energy Commission Public Adviser's Office has solicited public input for the SSU6 by preparing and distributing a Spanish/English bilingual project description describing the project, explaining the review process and providing contact information. Copies of the AFC were distributed to the El Centro and Calipatria libraries and, in addition to the project description flyers, posters were prepared announcing the project to be posted at those locations. Additionally, 1,400 of the bilingual project description flyers were distributed to homes through the Calipatria Unified School District. An additional 5,000 flyers were sent to the Imperial Valley Press for distribution. The Public Adviser also participated in the Informational Hearing and Site Visit in Calipatria on November 19, 2002, and at the Preliminary Staff Assessment Workshop held in El Centro on May 14 and 15, 2003, and has also provided free teleconference numbers and appropriate notices for access to all workshops. The Public Adviser has responded to requests for information from the public and provided referrals to staff.

Staff provides notice to the public of the proposed project and opportunities for participation in all of our workshops. As a result individuals and representative groups such as the Brawley National Association for the Advancement of Colored People (NAACP) have attended and some have presented verbal comments regarding the project at these meetings.

Staff has undertaken an extensive effort, in cooperation with the applicant, to coordinate and provide opportunities for input with the Native American community through letters, phone calls and the sharing of information. This effort included organization of a site visit for concerned individuals regarding Obsidian Butte, a culturally important site affected by the project.

HAZARDOUS WASTE

Supplemental Testimony of Ellie Townsend-Hough

Question: The applicant's AFC and Staff's FSA both indicate that project will generate approximately 2.5 tons/day of elemental sulfur from the H₂S abatement system. According to the AFC, if this material is characterized as hazardous, it will be disposed as a hazardous waste at an approved site; if the material is classified as non-hazardous, it will be disposed in a Class I (should be Class III instead of I) landfill. Describe characteristics of similar wastes from other similar projects. (Will the

characteristics of this material be significantly similar/different?) Also, describe recycling alternatives for the elemental sulfur, related economics and feasibility of recycling.

Response: Additional comparative information was provided through a conversation with Murray Grande of Northern California Power Authority (NCPA), an owner/operator of geothermal plants at the Geysers. The NCPA projects produce two tons per day of elemental sulfur. At the Geysers there was Mercury in the steam. Initially the project operator land-filled all of the Mercury contaminated sulfur. Currently the NCPA project owners are utilizing a Mercury filter bed to remove the contaminate from the sulfur. The Mercury filter beds cost approximately \$75,000 and the filter media cost approximately \$20,000. These costs are from older equipment and the contaminants at the Geyser may be different than those at Salton Sea. The NCPA project owners now sell the sulfur as fertilizer and soil amendment.

Sulfur recovery involves the conversion of hydrogen sulfide to elemental sulfur. Mr. Grande stated that the current markets for elemental sulfur are fertilizer, soil amendment and the sulfuric acid market although the development of the sulfuric acid market has not taken off. The geothermal developments and oil refineries produce the majority of the elemental sulfur. Hydrogen sulfide is also a byproduct of processing natural gas and refining high-sulfur crude oils. No specific characterization of the sulphur from Salton Sea Unit 6 is available, and no marketing or recycling information has been developed for the project's potential waste sulphur at this time.

FIRE PROTECTION/EMERGENCY

Supplemental Testimony of Geoff Lesh and Rick Tyler

Question: Describe employee(s) role(s) in responding to fire emergencies or hazardous material/waste spills. Describe the proposed employee training and certification level.

Response: This is described in the AFC Worker Safety Section 5.16.2.2.7 Emergency Action Plan, and 5.15.2.2.8 Fire Prevention Plan. These plans detail physical arrangement, types of equipment, emergency response and emergency exit plans. The Imperial County Fire Department will have the responsibility to perform final inspections after construction and conduct periodic fire and life safety inspections. In addition, the Fire Department approves and may conduct training regarding fire fighting demonstrations, housekeeping practices, fire procedures, system and equipment maintenance and fire alarm and protection equipment (AFC page 5.16-11, 5.15-12). Final details of the Emergency Action Plan, Hazardous Materials Management Program, Fire Protection and Prevention Program, and Personal Protective Equipment Program will be submitted to the CPM as part of the requirements of Condition of Certification **Worker Safety-2**.

Question: Describe specific project fire protection/suppression capabilities, e.g. fire pumps, sprinklers, foam, gas and alarms. Also include back-up fire pumps and motive power (diesel/electric/steam).

Response: The details for this are described in the AFC Worker Safety Section, 5.16.2.2.9, Fire Suppression, and include handcart carbon dioxide extinguishers, fire hydrants and hose stations, a sprinkler system, smoke detectors, gas detectors and fire extinguishers. These will be located appropriately throughout the facilities according to National Fire Protection Association and California Building Code provisions. Water will be the primary mode for fighting fires, supplied from the Imperial Irrigation District water system (canal) with a 300,000 gallon firewater tank. In addition chemical and gas extinguishing agents will be provided in special hazard areas where water would be ineffective or harmful to equipment being protected (AFC page 5.16-12).